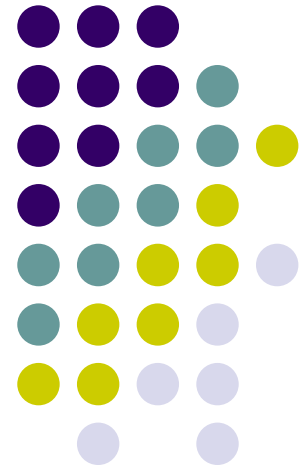
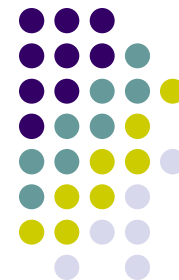


Hazardous Material Tracking at Langley Research Center

Carter Ficklen III, CIH
Mainthia Technologies, Inc
Safety and Mission Assurance
Contract



History of Hazardous Material Tracking at LaRC



- 80s
 - Chemical Approval with a paper form 44
 - Time consuming.....
 - Lots of opportunity to hustle the system
 - Paper MSDSs
 - Paper inventories
- Mid 90s
 - Web Based Chemical Material Tracking System (CMTS)
 - Still paper inventory and paper MSDSs
 - Needs Assessment in 1994
 - Hand entered MSDSs
- 2000s
 - CMTS system upgraded
 - Greater storage needs
 - More user friendly
 - MSDSs required to be attached
 - User Guide and FAQs
 - Form 44 Coordinator added
 - "Pending Problem"

NASA Langley Form 44 (Rev. Dec. 1986) PREVIOUS EDITIONS ARE OBSOLETE Prescribing Documents LMI 5000.2, 1700.6 & LHB 1710.12

HAZARDOUS MATERIAL - PROCUREMENT INVENTORY AND STORAGE RECORD

INSTRUCTIONS: (1) For Radioactive Material use Langley Form 44A, "Radiation Hazard Form." (2) One hazardous item on a form. (3) Attach this form to the Purchase Request. (4) The requester is to fill in all blocks with an asterisk "*" (5) The Safety Manager is to fill in all blocks with a dagger "†" (6) The Transportation & Warehousing Section is to fill in all blocks with a double dagger "‡"

Date: 8-18-95

ROUTING AND APPROVALS		* Building	* M/S	* Extension
1 * Requester	JOHN POWELL	FAB MINTL CS	1283	484 4420
2 * Custodian	JOHN POWELL			
3 Section or Branch Head's Signature	<i>[Signature]</i>			Date: 8-18-95
4 Facility Safety Head's Signature	<i>[Signature]</i>			Date: 8-18-95
5 Safety Manager's Signature	<i>[Signature]</i>	† Authorized U/I Each Requisition - Maximum		† Deliver to Bldg. No. 1283
6 Procurement Order or Contract No.	GJCC 0579			
7 Transportation & Warehousing Section (Hazardous Materials Storage) Inventory and Issuance Record-See Reverse Side				‡ Storage Location

* I. If material is a chemical, indicate degree of hazard in the appropriate block in the diamond: (0) no hazard; (1); (2); (3); or (4) extreme.

Health

1 (Red)

2 (Blue)

Reactivity

0 (Yellow)

EYE, SKIN HAZARD - WEAR PPE
Special Requirements

* II. Check box if material is pressurized equipment. ☐

* III. Check box if Material Safety Data Sheet (MSDS) is required. ☒

* List Handling Precautions - Include Damaged Containers - Additional Remarks for Personnel of the Section:

Is it safe for personnel of the Transportation & Warehousing Section to open and inspect shipment? Y

Is it safe to store this material overnight in the Transportation & Warehousing Section? Y

Should this material be transferred by special vehicle? N

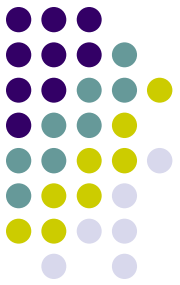
This hazardous material is authorized for use in Building 1283 only and may not be transferred/loaned without Safety Manager's approval.

1990 DATA (MSDS) INDICATES TOXIC SILVER MATERIAL.

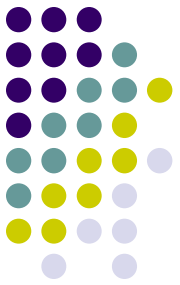
(PART 2-Safety Engineering Branch)

* Name (Generic)	* Name (Trade)	* Shelf Life
EPOXY	CHORDON	584-29

Chemical Material Tracking System



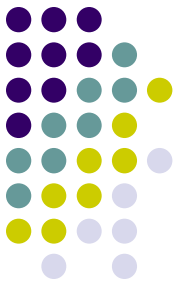
The CMTS is administered by SAIC



Backbone of CMTS

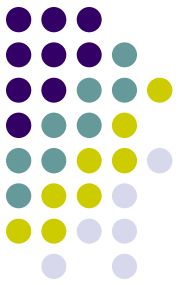
- Administered by SAIC as part of the Environmental Management Team
 - Server lives in the Emergency Operations Center
 - Backup in COD
- SQL Server
- Cold Fusion Web Applications
 - Takes webpages and dumps fields into database
 - Allows us to pull usage reports

What is CMTS?



12/13

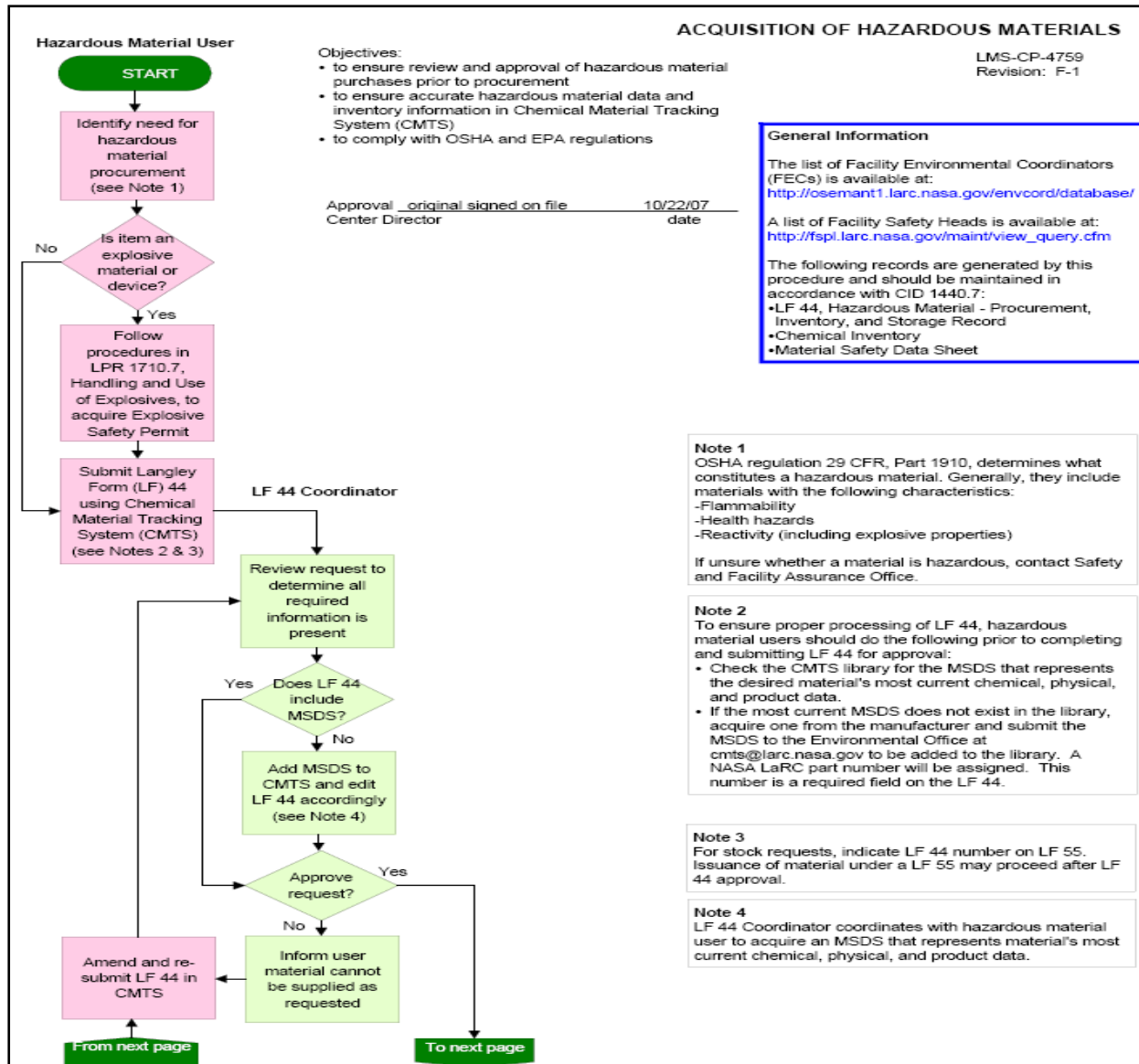
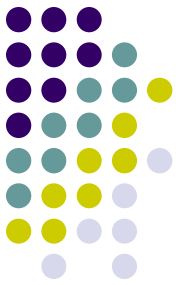
- The Chemical Material Tracking System
 - 106 inventories
 - 200+ users
 - 21,000+ MSDSs in the electronic library
 - 45,000+ container IDs currently tracked
 - every chemical container has its own container ID number and CMTS record.



Approval Process

- Purchaser initiates electronic Form 44 submitted via CMTS system
- Form 44 Administrator
 - Checks MSDS attached
- Facility Safety Head
 - from area where items will be used
- Industrial Hygiene
- Environmental Management Team
- Safety Manager

View of the LMS Process



NASA LaRC (Form 44)

Hazardous Materials Purchase Approval Form

ID: 17110

Information about the person requesting the material:

Requester:	Building:	OrgCode:	Phone:	E-Mail:
r.j.balla	1200	D304	44608	p.p.davis@larc.nasa.gov

Inspect the information below for the material(s) to be purchased.

Obtained by (as):	PR/Order #/Comment:	Building(for approval):
<input type="radio"/> Stock Request <input checked="" type="radio"/> PR <input type="radio"/> Credit Card <input type="radio"/> Free Sample <input type="radio"/> Other	NA	1200 - D304 : MEASUREMENT, SCIENCE AND TECHNOLOGY LABORATORY

Item #	Label Name	Vendor	MSDS Part #	# of units	unit size	unit of measure	NFPA	Health & Storage	Description
1	.102%F2,3.07%Ar,.002%	Spectra Gases	26BB2948	1	2000	Liter	1-0-1	ACGI	bldg 12
2	.08%F2,3.29%Ar,.005%Xe	Spectra Gases	26BB2948	1	2000	Liter	1-0-1	ACGI	bldg 12
3						Choose	0-0-0		
4						Choose	0-0-0		
5						Choose	0-0-0		
6						Choose	0-0-0		
7						Choose	0-0-0		

http://osemant1.larc.nasa.gov/cmts/form44/approve/aprove1.cfm?FORMID=17110&SI=IH&ps2=

File Edit View Favorites Tools Help

Google G Go Bookmarks 1239 blocked Check AutoLink AutoFill Send to Settings

Supplemental Form 44 - Hazardous Materials

Form 44 Coordinator	Osborn K. Connie	27-Jun-08	(Rejections only)
Facility Safety Head	Bradley D. Leighty	30-Jun-08	
IH	Not authorized yet	Yes <input type="button" value="Submit Authorization"/>	
Environmental Manager	Not authorized yet		
Safety Manager	Not authorized yet		

Hold This Form

Remarks:

NFPA Code in the form of A-B-C. A indicates health hazard; B indicates fire hazard; C indicates reactivity hazard. Code signifies relative hazard from (0) no hazard to (4) extreme hazard.

Health Codes:

A-Airway Irritant Gas
B-Poison
C-Corrosive
D-Carcinogen
E-Explosive
F-Combustible
G-Toxic

J-Reproductive Hazard

K-Organic Peroxide
L-Lachrymator
M-Biological
N-Hazardous Polymerization
O-Oxidizer
P-Pyrophoric

Storage Codes:

R-Refrigerate
S-Moisture Sensitive
T-Flammable
U-Light Sensitive
V-Compressed Gas
W-Water Reactive
X-Peroxide Former

Search Feature



CMTS Inventory Search - Windows Internet Explorer

http://osemant1.larc.nasa.gov/cmts/search/invent/invents1.cfm

File Edit View Favorites Tools Help

Google Go 1239 blocked Check AutoLink AutoFill Send to Settings

North Carolina (Outer Banks)... CMTS Inventory Search

Search for Materials at LaRC

Fill in the information you would like to search by and then click the Search button.

Number of Records to display:

Chemical Name:	<input type="text" value="Methylene Chloride"/>
Label Name:	<input type="text"/>
Vendor:	<input type="text"/>
Building:	<input type="text" value="Choose closest"/>
MSDS Part#:	<input type="text"/>
Container ID:	<input type="text"/>
CAS #:	<input type="text"/>
NSN #:	<input type="text"/>

Order by:

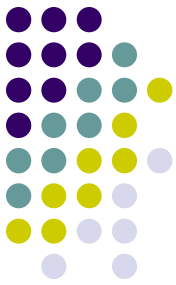
☐ Label ☒ Vendor ☐ Container ID ☐ Building

[Instructions...](#)

Done Internet 100%

start 5 M... 4 M... 4 M... aihc... Micr... Eud... Micr... CM... 9:25 AM

Results From Search



Inventory Search Results - Windows Internet Explorer

http://osemant1.larc.nasa.gov/cmts/search/invent/invents.cfm

zippi fish

File Edit View Favorites Tools Help

Google Go 1239 blocked Check Look for Map AutoFill Send to Settings

CMTS On-Line Manuals and G... Google Image Result for http... Inventory Search Results

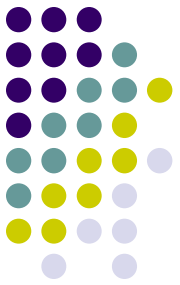
Inventory Search Results

36 Records Found:

CONTAINER ID	MSDS Part #	LABEL NAME	VENDOR	Building	Quantity
22271692	1267A00219	Methylene Chloride	Fisher Scientific	1250 - D210 SITB, MED- & HIGH-BAY	1.00 QT
22229911	582a070309	Methylene chloride	Fisher	1294 - RCA ADVANCED MATERIALS & PROCESSING LAB	4.00 L
29935107	1267A00219	methylene chloride	Fisher scientific	- D210 SITB Lab, Room 123A	1.00 l
2258408	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
22278483	20DD4058	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2258409	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2258410	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2258411	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2258412	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2258413	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2258414	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2255157	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2255158	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
22249980	20DD4058	Methylene chloride, ACS	Fisher	1293A - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2258415	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2258416	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2258417	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2258418	20DD5987	Methylene chloride, ACS	Fisher	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
22249984	20DD4058	Methylene chloride, ACS	Fisher	1293A - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2273273	26DD2409	Methylene chloride, anhydrous	Sigma-Aldrich	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	2.00 L
2273274	26DD2409	Methylene chloride, anhydrous	Sigma-Aldrich	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	2.00 L
2273275	26DD2409	Methylene chloride, anhydrous	Sigma-Aldrich	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	2.00 L
2273276	26DD2409	Methylene chloride, anhydrous	Sigma-Aldrich	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	2.00 L
2286900	26BB3761	Methylene chloride, certified	Fisher Scientific	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2286897	26BB3761	Methylene chloride, certified	Fisher Scientific	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L
2286898	26BB3761	Methylene chloride, certified	Fisher Scientific	1293C - RCA ADVANCED MATERIALS & PROCESSING LAB	1.00 L

Done

start 10 Mi... 5 Micr... 7 Micr... ahce08 7 Micr... 5 Micr... Invent... 5:49 PM



Challenges we have faced

- Getting all facilities to “play”
- Contractor compliance
 - ROME Contract has done an excellent job
 - CMTS participation was written as a requirement in SOW
- Home Depot and Lowes
 - Procurement checking Gov’t Credit Cards is helping a bunch in this area
- Turnover in Facility Environmental Coordinator Position
- Vendor samples
- Modifying the CMTS System can be costly
 - It is a custom system.....